CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 96-036

REVISED SITE CLEANUP REQUIREMENTS FOR:

PHILIPS SEMICONDUCTORS

for the property located at

730 EAST EVELYN AVENUE
SUNNYVALE
SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter the Board), finds that:

1. **Site Location**: The Philips Semiconductors (Philips) site is located on East Evelyn Avenue, approximately 500 feet west of North Wolfe Road in Sunnyvale. The site is located approximately 1.5 miles south of Highway 101, and 5 miles south of the San Francisco Bay. Areas surrounding the site are commercial, industrial and residential.

2. **Site History**: Prior to 1975 the 730 East Evelyn Avenue site was occupied by the Stewart Warner Company. Signetics Corporation (Signetics) operated a semiconductor manufacturing facility at the site from 1975 to 1984, and vacated the site in 1986. Signetics was owned by the North American Philips Corporation, now known as Philips Electronics North America Corporation (Philips). Philips assumed cleanup responsibilities of the 730 Evelyn Avenue site. The site is currently developed as an apartment complex, and is owned by Essex Bristol Partnership.

   During their occupancy of the site, Signetics utilized an underground waste solvent tank, waste acid tank, and an acid neutralization system. Soil sampling at the site initiated in 1982 indicated that VOCs were released from the tanks and the acid waste neutralization system. The solvent and acid waste tanks were removed from the site; the waste water neutralization system was demolished in place and backfilled. Subsequent investigation indicated that groundwater was impacted by VOCs.

3. **Named Dischargers**: Philips, which acquired Signetics and assumed responsibility for Signetics' environmental cleanups, is named as the discharger in this order. The Board reserves the right to name Essex Bristol Partnership as a discharger in the

future, based on its status as current property owner.

If additional information is submitted indicating that other parties caused or permitted any waste to be discharged on the site where it entered or could have entered waters of the state, the Board will consider adding that party's name to this order.

4. **Site Hydrogeology**: The site is flat and slopes gently to the north. The site is underlain by alluvial channel deposits consisting of silt and clay layers interbedded with sand and gravel layers. The deposits are of variable thickness and are laterally discontinuous. The A-zone groundwater is encountered at approximately 25 feet below ground surface, and extends to approximately 45 below ground surface. Groundwater in the A-zone flows generally to the northeast. The B-zone groundwater is encountered at 60 feet below ground surface, and extends to approximately 75 feet below the ground surface. Groundwater in the B-zone flows generally to the north-northeast.

5. **Remedial Investigation**: Site investigation was initiated in 1982 after leakage of solvents from the underground tanks was identified. Soils in the area of the tanks was impacted with low levels (generally less than 1 ppm) of VOCs. Groundwater monitoring wells were also installed on- and off-site; sampling of the wells indicates that the A-zone beneath the site has been impacted with up to 2,200 ppb total VOCs, substantially higher than drinking water standards. The VOC plume is approximately 500 feet wide and 800 feet long, and extends into off-site areas. The pollution plume does not appear to be migrating significantly since investigations were initiated. However, additional investigation in both the A- and B-zone is necessary to confirm that the extent of groundwater pollution has been adequately defined.

6. **Interim Remedial Measures**: Signetics replaced the tanks in 1983. During replacement the impacted soils surrounding the tanks were removed and disposed off-site. The replacement tanks were removed in 1986. Groundwater remediation began in 1987 with the installation and operation of two extraction wells. Remediation was expanded in 1988 with the installation of three additional extraction wells. The extraction system is currently extracting approximately 40,000 gallons per day from the A-zone. Contingent upon the results of additional groundwater sampling, the groundwater remedial measures may be sufficient to remediate the site. Remedial measures need to be continued at this site to reduce the threat to water quality, public health, and the environment posed by the discharge of waste and to provide a technical basis for selecting and designing final remedial measures.

7. **Adjacent Sites**: Within a one mile radius of the Philips Semiconductor site are a number sites which are confirmed sources of VOC groundwater contamination. Because the area is largely industrial, there are also a number of other potential sources of VOC groundwater contamination. However, based on the available data, the VOC groundwater plume originating from the Philips site does not appear to be

commingling with pollution plumes originating from other sites. Should additional information indicate that commingling does exist, modifications may be made to this order.

8. **Regulatory Status**: The Board has adopted the following orders for this site:

o Site Cleanup Requirements Order No. 88-014 adopted January 20, 1988
o NPDES Permit Order No. 94-087 adopted July 20, 1994

The purpose of this order is to update the previous Site Cleanup Requirements to include tasks necessary to complete the site investigation and prepare a remedial action plan.

9. **Basin Plan**: The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board and the Office of Administrative Law on July 20 and November 13, respectively, of 1995. A summary of regulatory provisions is contained in Title 23 of the California Code of Regulations at Section 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

The potential beneficial uses of groundwater underlying and adjacent to the site include:

a. Municipal and domestic water supply
b. Industrial process water supply
c. Industrial service water supply
d. Agricultural water supply

At present, there is no known use of groundwater underlying the site for the above purposes.

10. **Other Board Policies**: Board Resolution No. 88-160 strongly encourages dischargers of extracted, treated groundwater from site cleanups to reuse it or discharge it to the sanitary sewer.

Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high TDS, low yield, or naturally-high contaminant levels.

11. **State Water Board Policies**: State Water Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the

highest level of water quality which is reasonable if background levels of water quality cannot be restored. Non-background cleanup levels must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives.

State Water Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. This order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

12. **Preliminary Cleanup Goals**: The discharger will need to make assumptions about future cleanup standards for soil and groundwater, in order to determine the necessary extent of remedial investigation, interim remedial actions, and the draft cleanup plan. Pending the establishment of site-specific cleanup standards, the following preliminary cleanup goals should be used for these purposes:

    a. Groundwater: Applicable water quality objectives (e.g. maximum contaminant levels, or MCLs) or, in the absence of a chemical-specific objective, risk-based levels (e.g. drinking water equivalent levels).

    b. Soil: 1 mg/kg total volatile organic compounds (VOCs), 10 mg/kg total semi-volatile organic compounds (SVOCs), and background concentrations of metals.

13. **Basis for 13304 Order**: The discharger has caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.

14. **Cost Recovery**: Pursuant to California Water Code Section 13304, the discharger is hereby notified that the Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.

15. **CEQA**: This action is an order to enforce the laws and regulations administered by the Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.

16. **Notification**: The Board has notified the discharger and all interested agencies and persons of its intent under California Water Code Section 13304 to prescribe site cleanup requirements for the discharge, and has provided them with an opportunity to submit their written comments.

17. **Public Hearing:** The Board, at a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the discharger (or its agents, successors, or assigns) shall cleanup and abate the effects described in the above findings as follows:

A. **PROHIBITIONS**

1. The discharge of wastes or hazardous substances in a manner which will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.

2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of wastes or hazardous substances are prohibited.

B. **TASKS**

1. **REMEDIAL INVESTIGATION WORKPLAN**

COMPLIANCE DATE: April 20, 1996

Submit a workplan acceptable to the Executive Officer for additional groundwater investigation necessary to confirm the extent of A-zone groundwater contamination, and to further determine whether the B-zone has been impacted. The workplan should specify investigation methods and a proposed time schedule.

2. **COMPLETION OF REMEDIAL INVESTIGATION AND PROPOSED FINAL REMEDIAL ACTIONS AND CLEANUP STANDARDS**

COMPLIANCE DATE: December 20, 1996

Submit a technical report acceptable to the Executive Officer containing:

a. Results of the remedial investigation
b. Evaluation of the installed interim remedial actions
c. Feasibility study evaluating alternative final remedial actions

d. Risk assessment for current and post-cleanup exposures
e. Recommended final remedial actions and cleanup standards
f. Implementation tasks and time schedule

Item c should include projections of cost, effectiveness, benefits, and impact on public health, welfare, and the environment of each alternative action.

Items a through c should be consistent with the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), CERCLA guidance documents with respect to remedial investigations and feasibility studies, Health and Safety Code Section 25356.1(c), and State Board Resolution No. 92-49 as amended ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304").

4. **Delayed Compliance**: If the discharger is delayed, interrupted, or prevented from meting one or more of the completion dates specified for the above tasks, the discharger shall promptly notify the Executive Officer and the Board may consider revision to this Order.

C. PROVISIONS

1. **No Nuisance**: The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in California Water Code Section 13050(m).

2. **Good O&M**: The discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.

3. **Cost Recovery**: The discharger shall be liable, pursuant to California Water Code Section 13304, to the Board for all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the site addressed by this Order is enrolled in a State Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the discharger over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.

4. **Access to Site and Records**: In accordance with California Water Code Section 13267(c), the discharger shall permit the Board or its authorized

representative:

a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

b. Access to copy any records required to be kept under the requirements of this Order.

c. Inspection of any monitoring or remediation facilities installed in response to this Order.

d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.

5. **Self-Monitoring Program**: The discharger shall comply with the Self-Monitoring Program as attached to this Order and as may be amended by the Executive Officer.

6. **Contractor/ Consultant Qualifications**: All hydrogeologic documents (plans, specifications, and reports) shall be signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.

7. **Lab Qualifications**: All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control (QA/QC) records for Board review. This provision does not apply to analyses that can only reasonably be performed on-site (e.g. temperature).

8. **Document Distribution**: All correspondence, technical reports, and other documents pertaining to compliance with this Order shall be sent to the attention of the designated Board staff person. Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies:

   a. City of Sunnyvale, Department of Public Safety
   b. County of Santa Clara, Department of Environmental Health
   c. Santa Clara Valley Water District

9. **Reporting of Changed Owner or Operator**: To the extent practicable, the discharger shall file a technical report on any changes in site occupancy or

ownership associated with the property described in this Order.

10. **Reporting of Hazardous Substance Release**: If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the discharger shall report such discharge to the Regional Board by calling (510) 286-1255 during regular office hours (Monday through Friday, 8:00 to 5:00).

    A written report shall be filed with the Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

    This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

11. **Rescission of Existing Order**: This Order rescinds Order No. 88-014.

12. **Periodic SCR Review**: The Board will review this Order periodically and may revise it when necessary. The discharger may request revisions and upon review the Executive Officer may recommend that the Board revise these requirements.

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on March 20, 1996.

Loretta K. Barsamian
Executive Officer

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13267 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY

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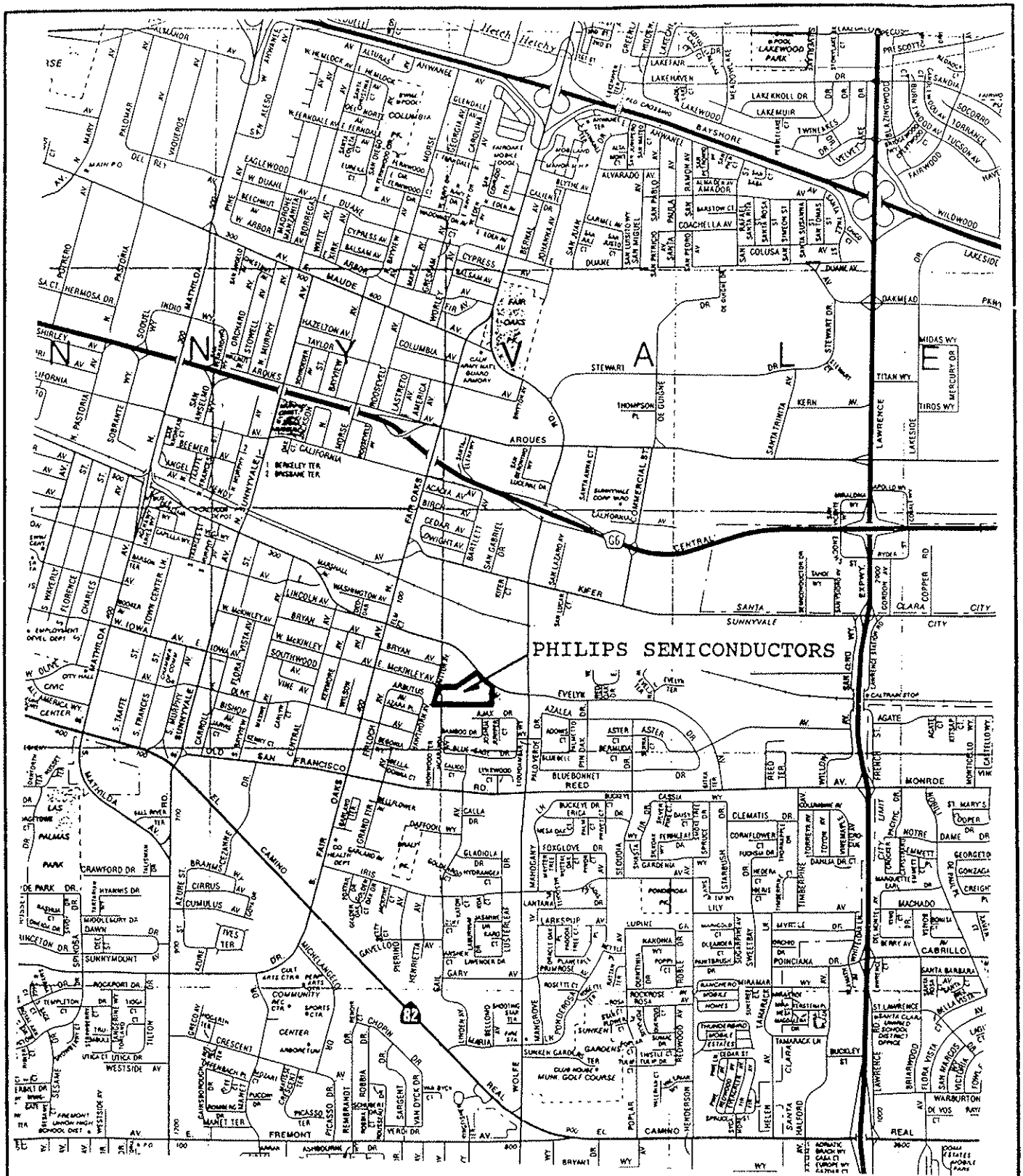
Attachments: Site Map
Self-Monitoring Program



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SITE LOCATION

PHILIPS SEMICONDUCTORS
730 EVELYN AVENUE, SUNNYVALE

DRAWN BY: CSF	DATE: 3/96	DRWG. NO.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM FOR:

PHILIPS SEMICONDUCTORS

for the property located at

730 EVELYN AVENUE
SUNNYVALE
SANTA CLARA COUNTY

1. **Authority and Purpose**: The Board requests the technical reports required in this Self-Monitoring Program pursuant to Water Code Sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance with Board Order No. 96-036 (site cleanup requirements).

2. **Monitoring**: The discharger shall measure groundwater elevations semi-annually in all monitoring wells, and shall collect and analyze representative samples of groundwater according to the following schedule:

Well #	Sampling Frequency	Analyses	Well #	Sampling Frequency	Analyses
S022A	SA	8010	S130A	SA	8010
S094A	SA	8010	S132A	SA	8010
S099A	SA	8010	S020A	A	8010
S114A	SA	8010	S020B1	A	8010
S115A	A	8010	S093A	A	8010
S116A	SA	8010	S097A	A	8010
S123A	SA	8010	S098A	A	8010
S124A	SA	8010	S121A	A	8010
S125A	SA	8010	S122A	A	8010
S128A	SA	8010	S126A	A	8010

Key: SA = Semi-Annually 8010 = EPA Method 8010 or equivalent
A = Annually

The discharger shall sample any new monitoring or extraction wells quarterly and analyze groundwater samples for the same constituents as shown in the above table. The discharger may propose changes in the above table; any proposed changes are subject to Executive Officer approval.

3. **Semi-Annual Monitoring Reports:** The discharger shall submit semi-annual monitoring reports to the Board no later than 30 days following the end of the second and fourth quarters (e.g. first semi-annual report due July 30). The first semi-annual report will be due on July 30, 1996. The reports shall include:

   a. Transmittal Letter: The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the discharger's principal executive officer or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

   b. Groundwater Elevations: Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map should be prepared for each monitored water-bearing zone. Historical groundwater elevations should be included with each semi-annual report.

   c. Groundwater Analyses: Groundwater sampling data shall be presented in tabular form, and an isoconcentration map should be prepared for one or more key contaminants for each monitored water-bearing zone, as appropriate. The report shall indicate the analytical method used and detection limits obtained for each reported constituent. Historical groundwater sampling results shall be included in each semi-annual report. The report shall describe any significant increases in contaminant concentrations since the last report, and any measures proposed to address the increases. Supporting data, such as lab data sheets, need not be included (however, see record keeping - below).

   d. Groundwater Extraction: If applicable, the report shall include groundwater extraction results in tabular form, for each extraction well and for the site as a whole, expressed in gallons per minute and total groundwater volume for the reporting period. The report shall also include contaminant removal results, from groundwater extraction wells and from other remediation systems (e.g. soil vapor extraction), expressed in units of chemical mass per day and mass for the reporting period. Historical mass removal results shall be included in each semi-annual report.

e. Status Report: The semi-annual report shall describe relevant work completed during the reporting period (e.g. site investigation, interim remedial measures) and work planned for the following half-year.

4. **Violation Reports**: If the discharger violates requirements in the Site Cleanup Requirements, then the discharger shall notify the Board office by telephone as soon as practicable once the discharger has knowledge of the violation. Board staff may, depending on violation severity, require the discharger to submit a separate technical report on the violation within five working days of telephone notification.

5. **Other Reports**: The discharger shall notify the Board prior to any site activities, such as construction or underground tank removal, which have the potential to cause further migration of contaminants or which would provide new opportunities for site investigation.

6. **Record Keeping**: The discharger or his/her agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination.

7. **SMP Revisions**: Revisions to the Self-Monitoring Program may be ordered by the Executive Officer, either on his/her own initiative or at the request of the discharger. Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.

I, Loretta K. Barsamian, Executive Officer, hereby certify that this Self-Monitoring Program was adopted by the Board on March 20, 1996.

Loretta K. Barsamian
Executive Officer